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M.R.P.136
9th September 1943.

AIR MINISTRY
METEOROLOGICAL RESEARCH COMMITTEE.

P 8616

Sub-Committee on Long-range Forecasting. Report of Meeting at Victory House on Wednesday September 1, 1943.

Present:- Prof. G.I. Taylor in the Chair.
Mr. E.G. Bilham.
Dr. C.E.P. Brooks.
Mr. E. Gold.
Dr. A.H.R. Goldie.
Inst.Commdr. C.T. Suthons.
Sir Gilbert Walker.

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1. Report on the work of the L.R.F. Unit, May to August 1943, and Analysis of results.

Dr.Brooks read a report, M.R.P. 133, in which he pointed out that the daily synoptic charts as forecasted by wave analysis had proved quite unsatisfactory. The same conclusion followed from a statement, M.R.P. 134, prepared by Mr.Bilham. Dr.Brooks attributed this result partly to an error in the calculations, but mainly to the great difficulty of the analyses on which the forecasts were based and to "cross-infection" - spurious "waves" of a given period arising from real waves of a different period. He agreed that no useful purpose would be served by a continuation of the trial along the present lines.

It was then pointed out that the "trend" forecasts for 6-day periods, which had been made to check the wave forecasts but had not been issued, had been much more satisfactory, the proportion of successes being about 70 per cent. The evidence of the correlation coefficients was corroborated by independent estimates of the quality of the forecasts by forecasters at Eta. Mr.Bilham said that Mr.Douglas considered that such forecasts would be of value. The staff required for them was also very small.

2. Dr.Brooks then described (M.R.P.135) a method of smoothing which tends to suppress all periods except those in the neighbourhood of one which is being examined. This method may serve as an alternative to periodogram analysis. In the example given wave like disturbances appear when the smoothing formula is applied using certain time intervals, but not with others. Though these disturbances can hardly be described as strictly periodic they may turn out to be characteristic of certain phases of the weather situation. The Sub-Committee considered that this method had not yet been sufficiently tested to prove its value but agreed that it would be worth while to apply it to the data used in the trial. Dr.Brooks said this could readily be done in a short time.

3. Preparation of a Report. It was agreed that in view of the large amount of material which had been collected, Dr.Brooks should prepare a detailed report on the trial, and that a small staff should be allocated to assist him in this.

4. The findings of the Sub-Committee in relation to its terms of reference were then summarised as follows:-

(i) The results of the May to August trial of the revised procedure for forecasting daily pressure charts by wave analysis had been unsatisfactory: the trial should be terminated.

(ii) A trial should be made of "Trend" forecasts. These should be made by Dr.Brooks at Stonehouse on data compiled at ETA. The data would be sent to Stonehouse and the forecasts made by Dr.Brooks transmitted to ETA (in some way to be arranged) to make them available in time to the forecasters there. The staff required is estimated as two assistants at ETA and one at Stonehouse. This trial should be continued for six months.

...

(iii) Dr.Brooks should prepare a detailed report on the results of the trial during May to August including his final consideration of the method of wave forecasting and a trial of the method proposed in M.R.P.135. For this purpose he should use the data of the period already worked up. Three Assistants should be allocated for this purpose for a period of three months, which should suffice to complete the examination.